ORDER NO. SD82032140C8

Service Manual

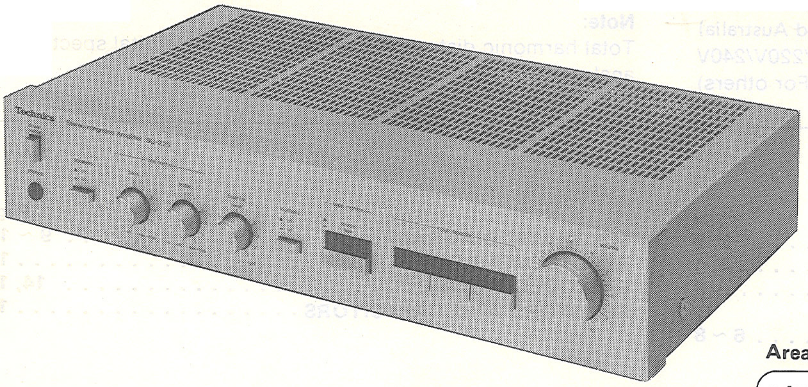
Stereo Integrated Amplifier

SU-Z25

[E],[EG],[EK],[EH],[Ei],
[EB],[EF],[XA],[XL]

SU-Z25(K)

[E],[EG],[EH],[Ei]



Areas

- * [E] is available in Switzerland and Scandinavia.
- * [EG] is available in F. R. Germany.
- * [EK] is available in United Kingdom.
- * [EH] is available in Holland.
- * [Ei] is available in Italy.
- * [EB] is available in Belgium.
- * [EF] is available in France.
- * [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- * [XL] is available in Australia.

- * The cabinet and front panel are available in black color and silver types.
- * The black type model is provided with (K) in the Service Manual.

Specifications

(Specifications are subject to change without notice for further improvement.)

(DIN 45 500)

■ AMPLIFIER SECTION

20 Hz~20 kHz continuous power output	
both channels driven	2 × 25W (4Ω) 2 × 25W (8Ω)
40 Hz~16 kHz continuous power output	
both channels driven	2 × 25W (4Ω) 2 × 25W (8Ω)
1 kHz continuous power output	
both channels driven	2 × 30W (4Ω) 2 × 30W (8Ω)
Total harmonic distortion	
rated power at 20 Hz~20 kHz	0.05% (4Ω) 0.03% (8Ω)
rated power at 40 Hz~16 kHz	0.05% (4Ω) 0.03% (8Ω)
rated power at 1 kHz	0.01% (4Ω) 0.005% (8Ω)
half power at 20 Hz~20 kHz	0.03% (8Ω)
half power at 1 kHz	0.005% (8Ω)
−26 dB power at 1 kHz	0.01% (4Ω)
50 mW power at 1 kHz	0.01% (4Ω)
Intermodulation distortion	
rated power at 250 Hz: 8 kHz=4:1, 4Ω	0.05%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.03%
Power bandwidth	
both channels driven, −3 dB	10 Hz~25 kHz (4Ω) 10 Hz~25 kHz (8Ω)
Residual hum and noise	0.6 mV
Damping factor	20 (4Ω), 40 (8Ω)

Input sensitivity and impedance	
PHONO	2.5 mV/47kΩ
TUNER, AUX	150 mV/22kΩ
TAPE	150 mV/22kΩ
PHONO maximum input voltage (1 kHz, RMS)	150 mV
S/N	
rated power (4Ω)	
PHONO	73 dB (IHF, A: 78 dB)
TUNER, AUX, TAPE	86 dB (IHF, A: 97 dB)
−26 dB power (4Ω)	
PHONO	65 dB
TUNER, AUX, TAPE	65 dB
50 mW power (4Ω)	
PHONO	62 dB
TUNER, AUX, TAPE	62 dB
Frequency response	
PHONO	RIAA standard curve ±0.8 dB (30 Hz~15 kHz)
TUNER, AUX, TAPE	5 Hz~80 kHz (−3 dB)
Tone controls	
BASS	50 Hz, +10 dB~ −10 dB
TREBLE	20 kHz, +10 dB~ −10 dB
Loudness control (volume at −30 dB)	50 Hz, +9 dB
Output voltage	
REC OUT	150 mV
Channel balance, AUX 250 Hz~6,300 Hz	±1 dB
Channel separation, AUX 1 kHz	50 dB
Headphones output level and impedance	340 mV/330Ω
Load impedance	4Ω~16Ω

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

GENERAL

Power consumption	260W
Power supply	AC 50 Hz/60 Hz, 220V (For continental Europe) AC 50 Hz/60 Hz, 240V (For United Kingdom and Australia) AC 50 Hz/60 Hz, 110V/120V/220V/240V (For others)
Dimensions (W×H×D)	430 × 86 × 252 mm (16-15/16" × 3-3/8" × 9-15/16")
Weight	4.8 kg (10.6 lb.)

Note:
Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

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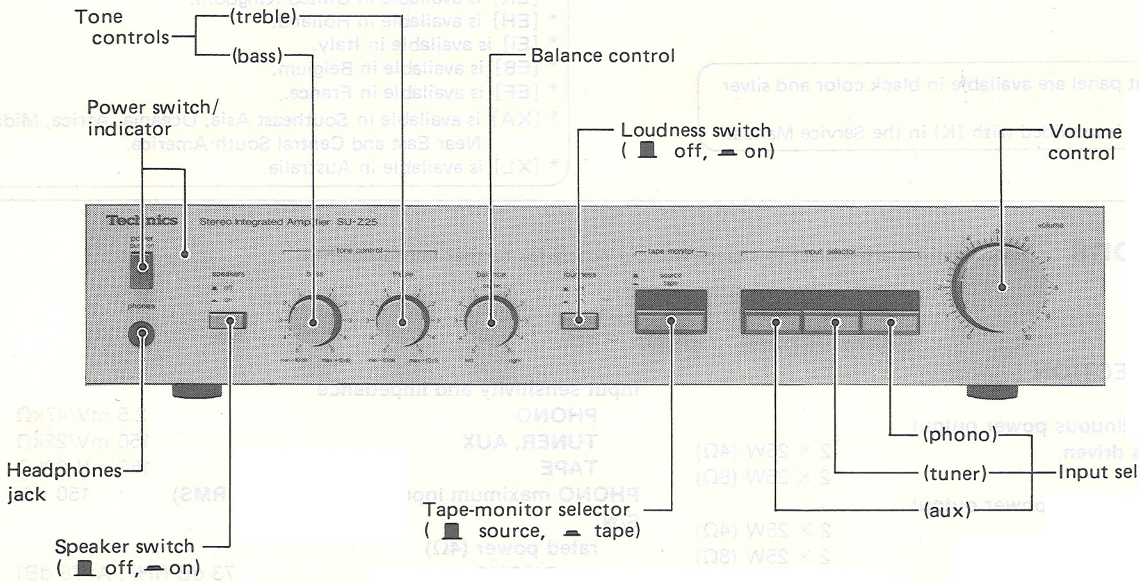
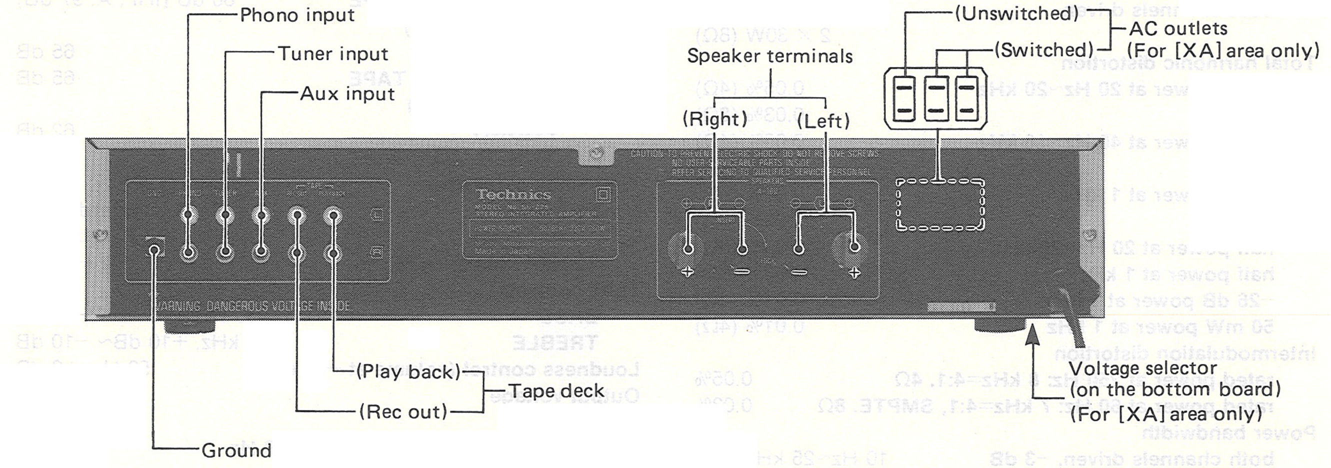
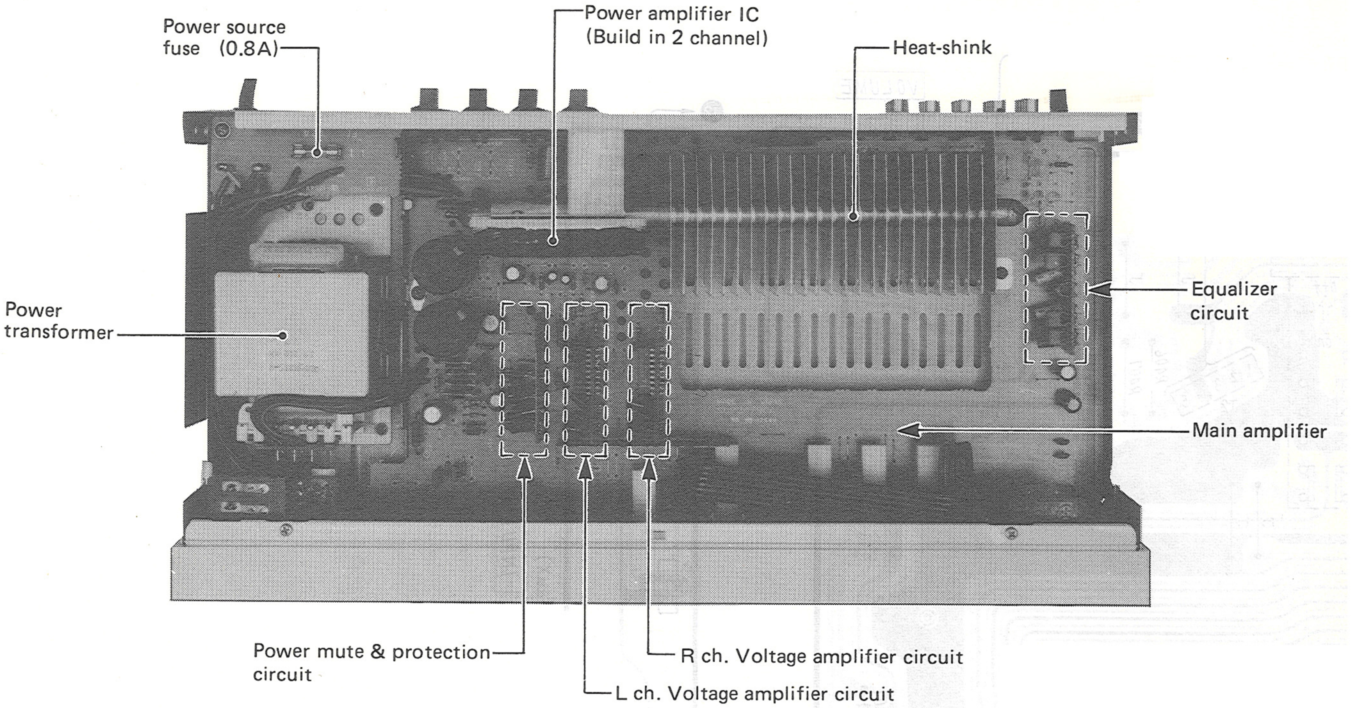
LOCATION OF CONTROLS


Tone controls
(treble)
(bass)
Balance control
Power switch/ indicator
Loudness switch (▮ off, ▬ on)
Volume control
Technics
Stereo Integrated Amplifier SU-Z25
(phono)
(tuner)
(aux)
Input selectors
Headphones jack
Tape-monitor selector (▮ source, ▬ tape)
Speaker switch (▮ off, ▬ on)


Phono input
Tuner input
Aux input
Speaker terminals
(Right)
(Left)
(Unswitched)
(Switched)
AC outlets (For [XA] area only)
Technics
WARNING: DANGEROUS VOLTAGE INSIDE
(Play back)
(Rec out)
Tape deck
Voltage selector (on the bottom board) (For [XA] area only)
Ground

- The power supply for this unit varies depending upon the areas. Also, the parts used for power supply are different. So, refer to the circuit diagram and the replacement parts list.

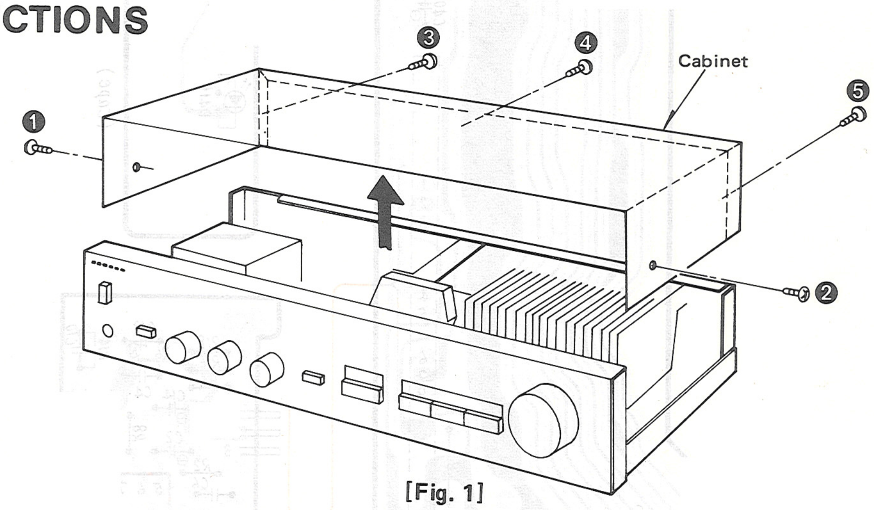
* 220V (50/60Hz) for continental Europe.
* 240V (50/60Hz) for United Kingdom and Australia.
* 110V/120V/220V/240V (50/60Hz) for other areas.
— [XA area] for other areas is provided with voltage selector and AC outlets.
* Phono input capacitance is about 150pF.


Power source fuse (0.8A)
Power amplifier IC (Build in 2 channel)
Heat-shink
Power transformer
Equalizer circuit
Main amplifier
Power mute & protection circuit
R ch. Voltage amplifier circuit
L ch. Voltage amplifier circuit

DISASSEMBLY INSTRUCTIONS

1. How to remove the cabinet

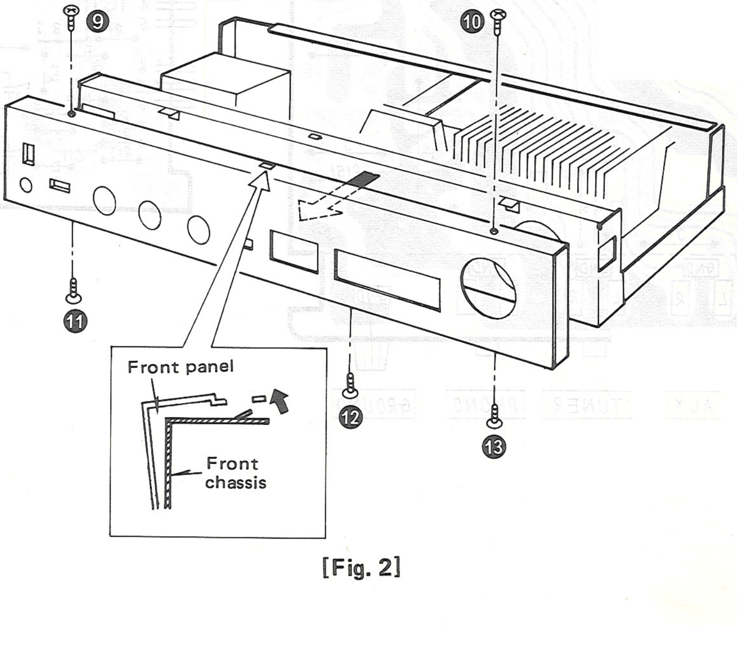
1. Remove the 2 setscrews (Fig. 1: ❶, ❷) on the side and 3 setscrews (Fig. 1: ❸ ~ ❺) on the back of the cabinet.
2. Remove the cabinet.


❶
❷
❸
❹
❺
Cabinet

[Fig. 1]

2. How to remove the front panel

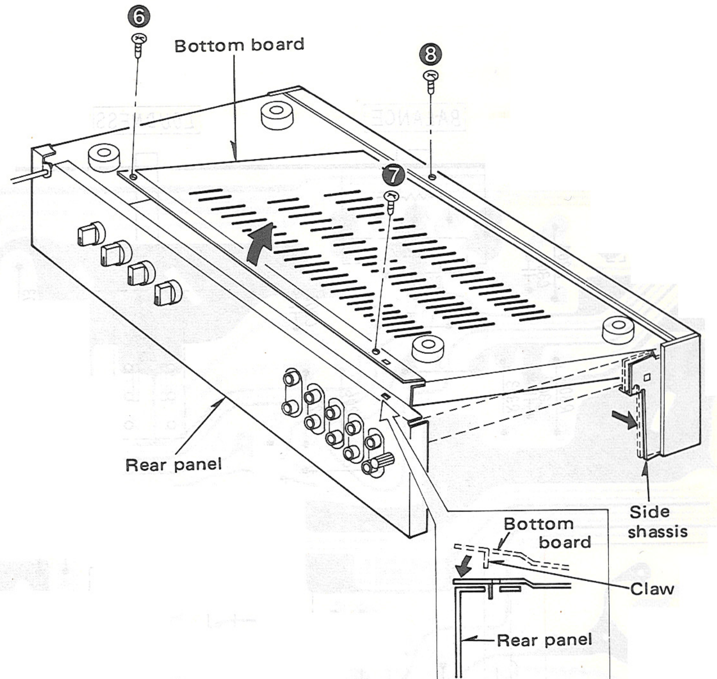
1. Remove the cabinet. (Refer to "How to remove the cabinet.)
2. Remove the 5 setscrews (Fig. 2: ❾ ~ ⓭) of the front panel. The center of the front panel is secured by the claw projected from the front chassis. So, release the front panel from the claw by using a screwdriver to remove it as shown in Fig. 2.


❾
❿
⓫
⓬
⓭
Front panel
Front chassis

[Fig. 2]

3. How to the remove the bottom board

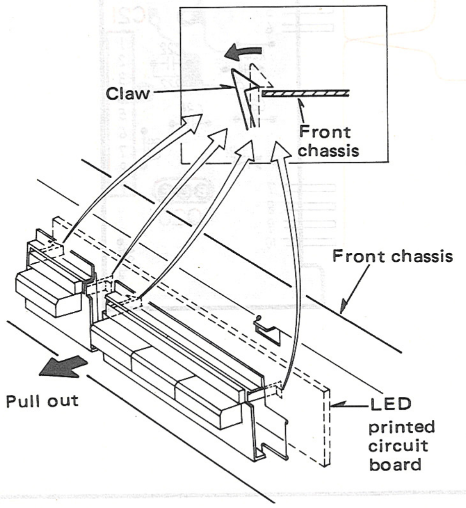
1. Remove the 3 setscrews (Fig. 3: ⑥ ~ ⑧) of the bottom board. Next, slightly widen side chassis to remove the bottom board in the direction of the arrow.
2. When fitting the bottom board, insert the claws of the bottom board into the holes in the rear panel before tightening the setscrews. (Fig. 3)


⑥
Bottom board
⑧
⑦
Rear panel
Side shassis
Bottom board
Claw
Rear panel

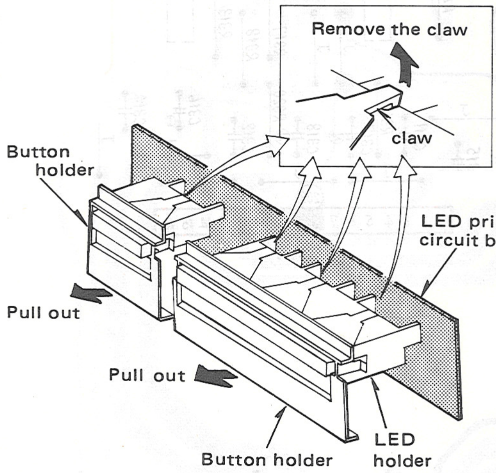
[Fig.3]

4. How to remove the input selector and tape monitor button.

1. Remove the cabinet and front panel. (Refer to "How to remove the cabinet" and "How to remove the front panel")
2. As in Fig. 4, release the 4 claws of the input selector and tape monitor button sleeves, then draw out the front panel. Next, the button sleeves can be removed by releasing the claw which fastens the LED holder. (Fig. 5)


Claw
Front chassis
Front chassis
Pull out
LED printed circuit board

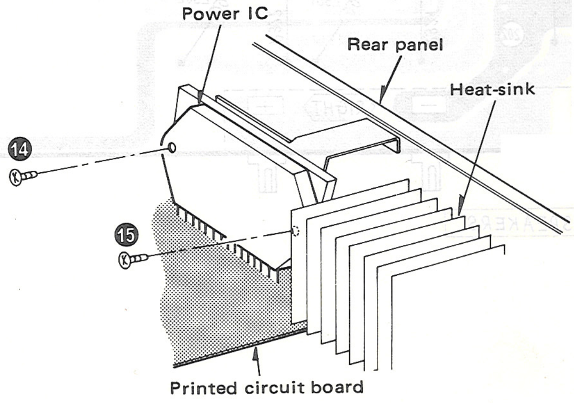
[Fig. 4]


Remove the claw
claw
Button holder
LED printed circuit board
Pull out
Pull out
Button holder
LED holder

[Fig. 5]

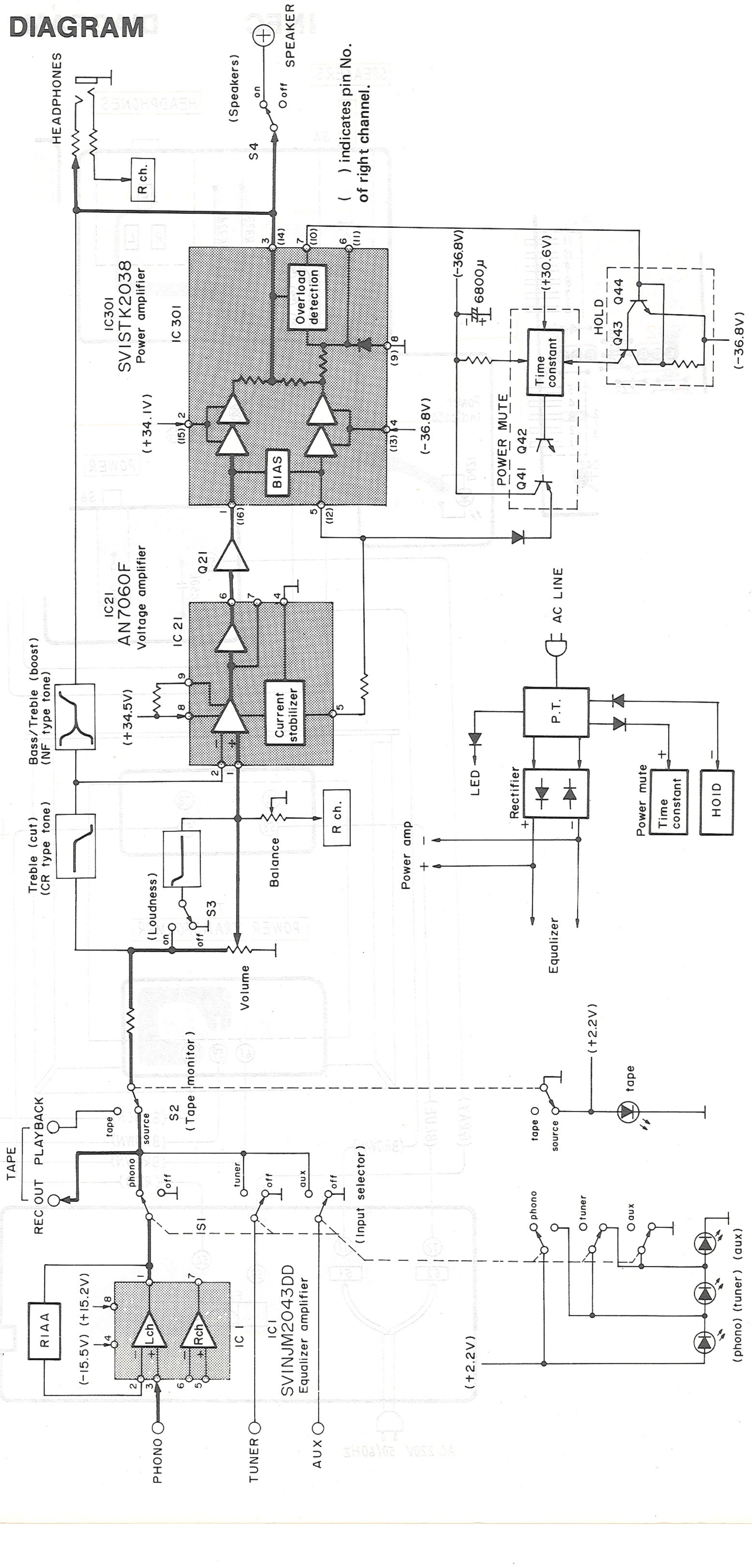
• How to remove the power IC

1. Remove the cabinet and bottom board. (Refer to "How to remove the cabinet" and "How to remove the bottom board")
2. Unsolder the power IC.
3. Remove the 2 setscrews (Fig. 6: ⑭ , ⑮) used to secure the power IC on the heat-sink, and then pull out the power IC.
4. When installing the power IC, apply heat diffusing agent (silicon powder, etc.) to back side of the IC, and secure it on the heat-sink with setscrews.


Power IC
Rear panel
Heat-sink
⑭
⑮
Printed circuit board

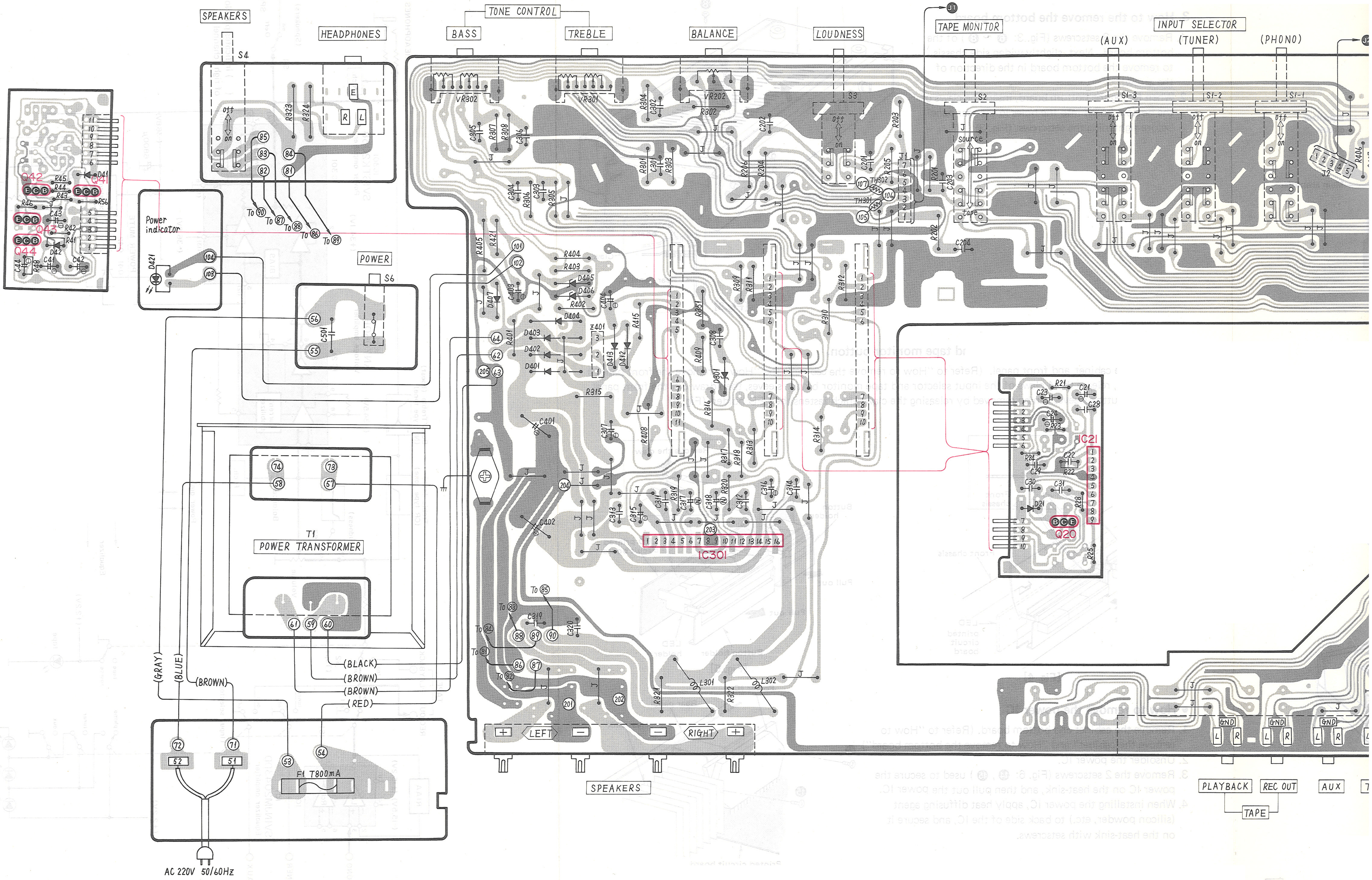
[Fig. 6]

BLOCK DIAGRAM

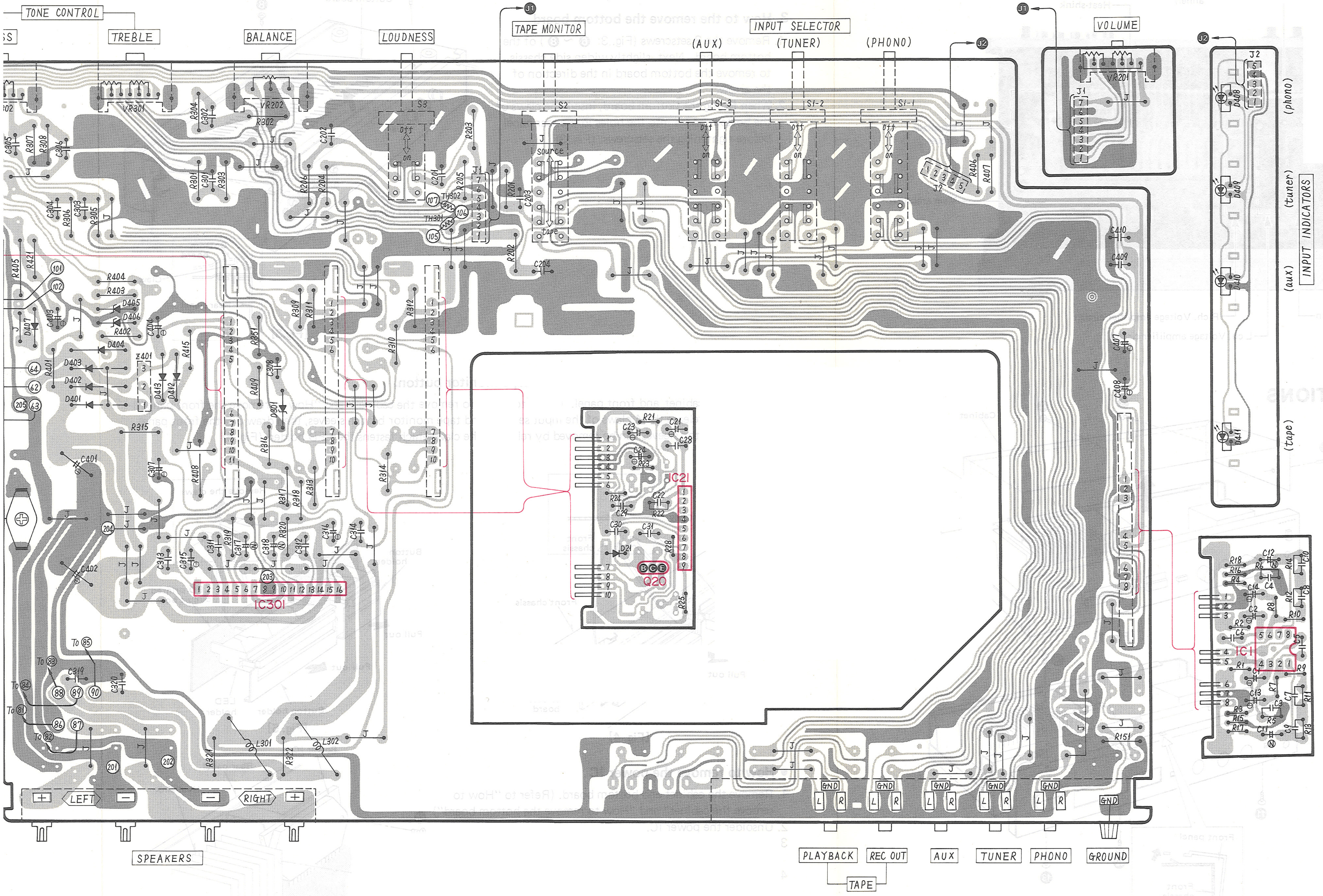

PHONO
TUNER
AUX
RIAA
(−15.5V) (+15.2V)
Lch
Rch
IC 1
IC1
SVINJM2043DD
Equalizer amplifier
TAPE
REC OUT PLAYBACK
phono
tuner
aux
off
S1
(Input selector)
tape
source
S2
(Tape monitor)
Volume
(Loudness)
on
off
S3
Balance
R ch.
Treble (cut)
(CR type tone)
Bass/Treble (boost)
(NF type tone)
(+34.5V)
Current stabilizer
IC 21
IC21
AN7060F
Voltage amplifier
Q21
(+34.1V)
BIAS
Overload detection
IC 301
IC301
SVISTK2038
Power amplifier
(−36.8V)
HEADPHONES
R ch.
(Speakers)
on
off
S4
SPEAKER
( ) indicates pin No.
of right channel.
6800μ
(+30.6V)
Time constant
POWER MUTE
Q41
Q42
HOLD
Q43
Q44
(−36.8V)
AC LINE
P.T.
LED
Rectifier
Power amp
Equalizer
Power mute
Time constant
HOlD
(+2.2V)
tape
source
(phono) (tuner) (aux)

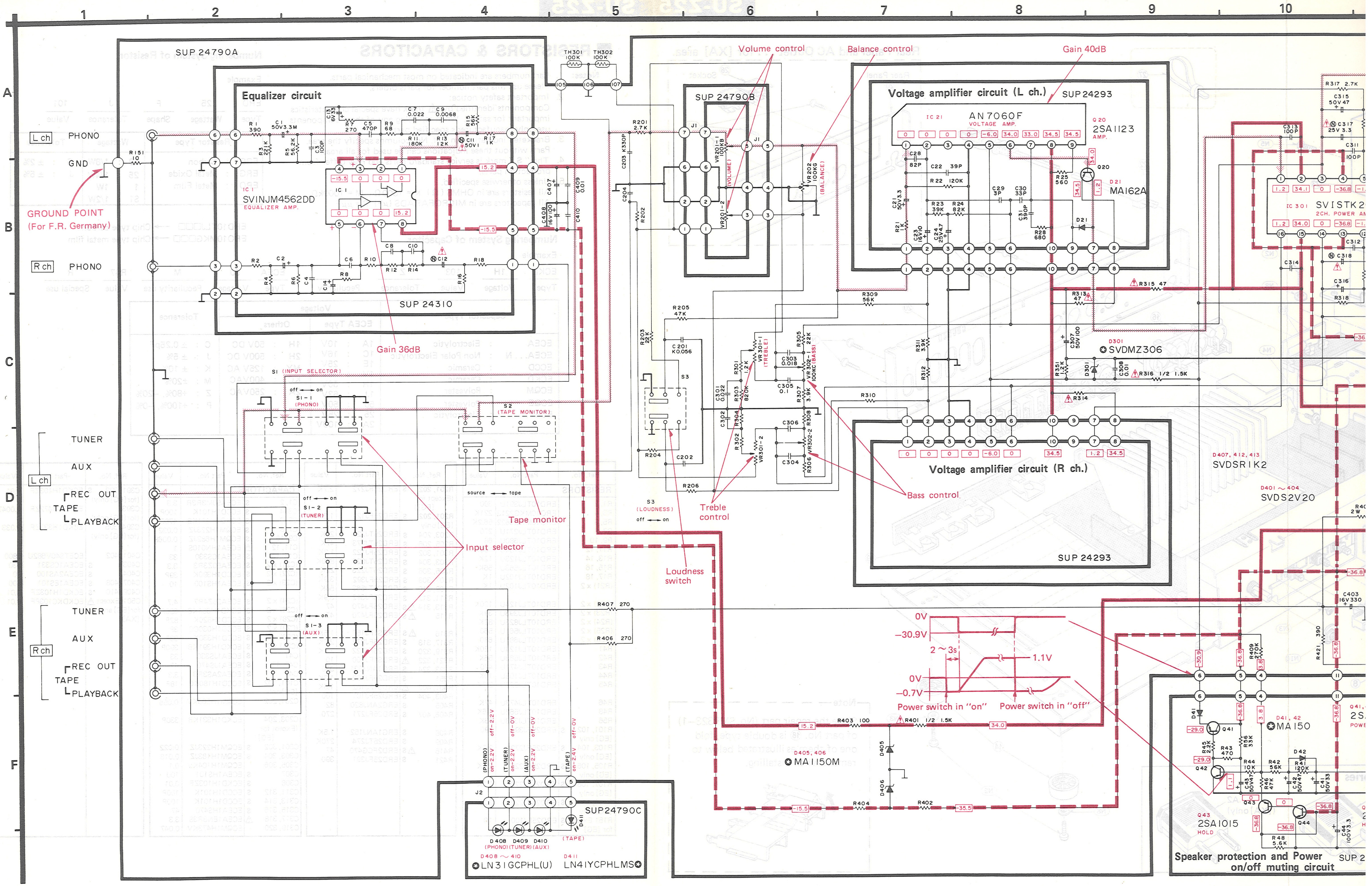
CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

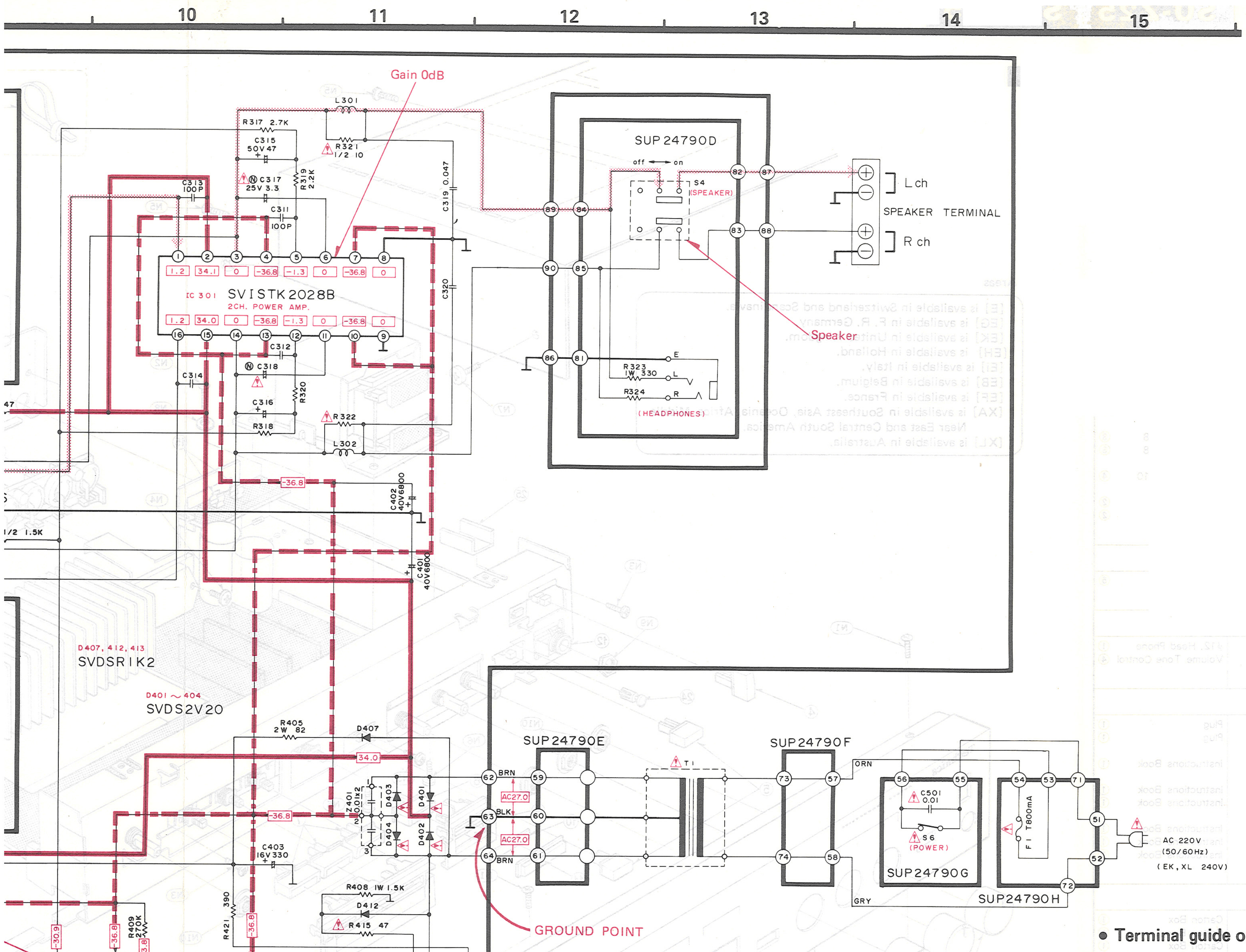
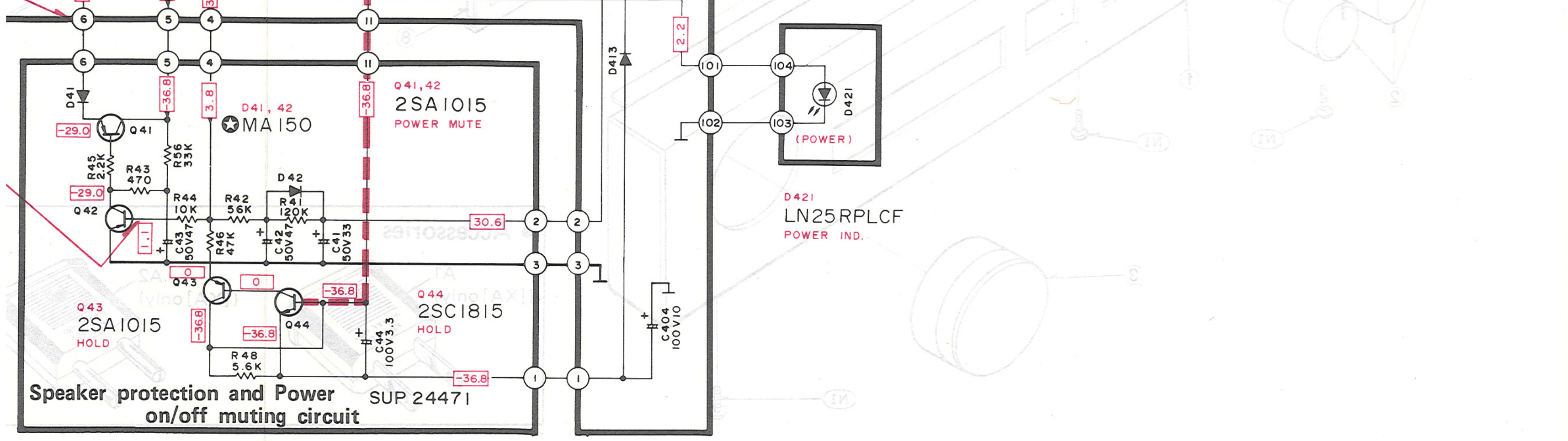
▨ Ground (Earth) circuit


SPEAKERS
S4
HEADPHONES
TONE CONTROL
BASS
TREBLE
BALANCE
LOUDNESS
TAPE MONITOR
INPUT SELECTOR
(AUX)
(TUNER)
(PHONO)
VR302
VR301
VR202
S3
S2
S1-3
S1-2
S1-1
source
tape
off
on
Q42
Q41
Q43
Q44
D41
D42
Power indicator
D421
POWER
S6
IC301
IC21
Q20
T1
POWER TRANSFORMER
(GRAY)
(BLUE)
(BROWN)
(BLACK)
(BROWN)
(BROWN)
(RED)
F1 T800mA
AC 220V 50/60Hz
LEFT
RIGHT
SPEAKERS
L301
L302
PLAYBACK
REC OUT
TAPE
AUX
GND
L
R

▨ **Ground (Earth) circuit**


TONE CONTROL
TREBLE
BALANCE
LOUDNESS
TAPE MONITOR
INPUT SELECTOR
(AUX)
(TUNER)
(PHONO)
VOLUME
J1
J2
VR301
VR202
VR201
S3
S2
S1-3
S1-2
S1-1
off
on
source
tape
TH301
TH302
(phono)
(tuner)
(aux)
(tape)
INPUT INDICATORS
D408
D409
D410
D411
IC301
IC21
Q20
B C E
IC1
L301
L302
LEFT
RIGHT
SPEAKERS
GND
L
R
PLAYBACK
REC OUT
TAPE
AUX
TUNER
PHONO
GROUND


SUP 24790A
Equalizer circuit
IC 1
SVINJM4562DD
EQUALIZER AMP.
SUP 24310
Gain 36dB
L ch
PHONO
GND
GROUND POINT
(For F.R. Germany)
R ch
PHONO
R151 10
TH301 100K
TH302 100K
SUP 24790B
Volume control
Balance control
VR201-1 100KB (VOLUME)
VR201-2
VR202 100KG (BALANCE)
R201 2.7K
C203 K330P
C204
R202
Gain 40dB
Voltage amplifier circuit (L ch.)
SUP 24293
IC 21
AN7060F
VOLTAGE AMP.
Q20
2SA1123
AMP.
D21
MA162A
C28 82P
C22 39P
R22 120K
R23 39K
R24 82K
C29 3P
C30 33P
R25 560
R28 680
R309 56K
R313 47
R315 47
D301
SVDMZ306
R316 1/2 1.5K
R314
R310
R311
R312
R351 1.2K
C307 50V 100
C308 0.01
IC 301
SVISTK2
2CH. POWER AMP.
R317 2.7K
C315 50V 47
C313 100P
C317 25V 3.3
C311 100P
C312
C314
C318
C316
R318
S1 (INPUT SELECTOR)
S1-1 (PHONO)
S1-2 (TUNER)
S1-3 (AUX)
S2 (TAPE MONITOR)
source ⟷ tape
off ⟷ on
Tape monitor
Input selector
TUNER
AUX
L ch
REC OUT
TAPE
PLAYBACK
TUNER
AUX
R ch
REC OUT
TAPE
PLAYBACK
R205 47K
R203
C201 K0.056
S3
S3 (LOUDNESS)
R204
C202
R206
Loudness switch
Treble control
Bass control
VR301-1 (TREBLE)
VR301-2
VR302-1 22K (BASS) 100KC
VR302-2
R301 1.2K
R303 820K
R305 22K
R307 3.9K
C303 0.018
C305 0.1
C301 0.022
C302
C306
C304
Voltage amplifier circuit (R ch.)
SUP 24293
D407, 412, 413
SVDSR1K2
D401 ~ 404
SVDS2V20
R407 270
R406 270
0V
−30.9V
2 ~ 3s
1.1V
0V
−0.7V
Power switch in "on"
Power switch in "off"
R403 100
R401 1/2 1.5K
D405, 406
MA1150M
R404
R402
J2
(PHONO) on-2.2V off-2.2V
(TUNER) on-2.2V off-0V
(AUX) on-2.2V off-0V
(TAPE) on-2.4V off-0V
SUP24790C
D408 D409 D410
(PHONO) (TUNER) (AUX)
D411 (TAPE)
D408 ~ 410
LN31GCPHL(U)
D411
LN41YCPHLMS
C403 16V 330
R421 390
R409 270K
D41
Q41
R45 2.2K
R43 470
R56 33K
R44 10K
R42 56K
R41 120K
D41, 42
MA150
D42
Q42
Q43
Q44
C43 50V47
C42 50V47
C41 50V 33
R46 47K
R48 5.6K
C44 100V3.3
Q43
2SA1015
HOLD
Q41, 42
2S
POWER
Speaker protection and Power on/off muting circuit
SUP 2



10
11
12
13
14
15
Gain 0dB
L301
R317 2.7K
C315 50V47
R321 1/2 10
C313 100P
C317 25V3.3
R319 2.2K
C311 100P
C319 0.047
IC301 SVISTK2028B
2CH. POWER AMP.
1.2
34.1
34.0
0
-36.8
-1.3
C320
C312
C318
C314
R320
C316
R318
R322
L302
-36.8
C402 40V6800
C401 40V6800
1/2 1.5K
SUP24790D
off ←→ on
S4 (SPEAKER)
Speaker
R323 1W 330
R324
(HEADPHONES)
E
L
R
Lch
SPEAKER TERMINAL
Rch
D407, 412, 413
SVDSR1K2
D401 ~ 404
SVDS2V20
R405 2W 82
D407
34.0
-36.8
Z401
D403
D404
D401
D402
AC27.0
C403 16V330
R408 1W 1.5K
D412
R415 47
R421 390
R409
SUP24790E
BRN
BLK
T1
SUP24790F
ORN
GRY
C501 0.01
S6 (POWER)
SUP24790G
F1 T800mA
SUP24790H
AC 220V (50/60Hz)
(EK, XL 240V)
GROUND POINT
-30.9
-36.8
3.8
D413
2.2
D421
(POWER)
D421
LN25RPLCF
POWER IND.
C404 100V10
D41
Q41
-29.0
D41, 42
✪MA150
Q41, 42
2SA1015
POWER MUTE
R45 2.2K
R43 470
R56 33K
Q42
R44 10K
R42 56K
D42
R41 120K
C43 50V47
R46 47K
C42 50V47
C41 50V33
30.6
Q43
2SA1015
HOLD
Q44
2SC1815
HOLD
R48 5.6K
C44 100V3.3
SUP24471
Speaker protection and Power on/off muting circuit

SCHEMATIC DIAGRAM

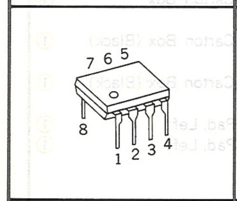
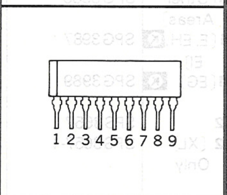
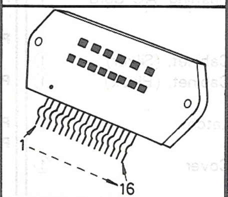
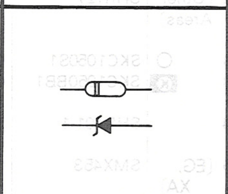
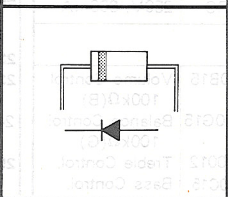
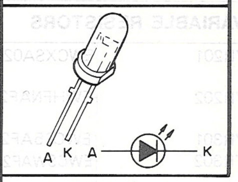
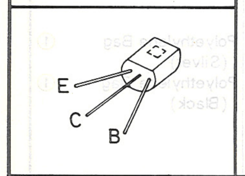
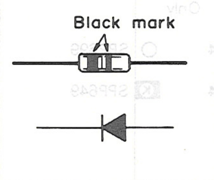
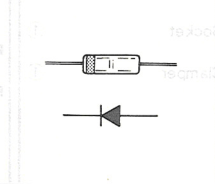
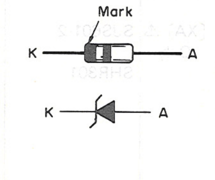
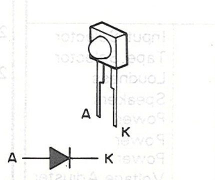
(This schematic diagram may be modified at any time with the development of new technology.)

* The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. without ✪ mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement parts, please use the part No. in the replacement parts list.

Notes:

1. This is the basic circuit diagram (For continental Europe) of this unit. Note that part of the circuit is subject to change depending on the areas.
2. Regarding the circuits to be changed in the basic circuit diagram (For continental Europe) and related areas [EG], [EF], [XL] and [XA], refer to the separate service manual (Order No. SD82032140C8–A).
3. **S1-1 ~ S1-3:** Input selector switch in "**phono**" position.
   S1-1: phono
   S1-2: tuner
   S1-3: aux
4. **S2:** Tape-monitor selector switch in "**source**" position.
   source ←→ tape
5. **S3:** Loudness switch in "**off**" position.
   on ←→ off
6. **S4:** Speaker switch in "**on**" position.
   on ←→ off
7. **S6:** Power switch in "**on**" position.
8. **S7:** Voltage selector switch in "**240V**" position.
   (Product for South East Asia. Oceania, Africa, Middle Near East and Central South America [XA])
   120V ←→ 110V ←→ 220V ←→ 240V
9. Same circuit is used for both L and R channels. For the resistance and capacity of R channel (lower of circuit diagram), refer to L channel. For the voltage value, refer to R channel.
10. ☐ Indicated voltage values are the standard values for the DC electronic circuit tester (high impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
11. ▨ Phono signal lines of left channel
12. ➡ Positive (+B) voltage lines.
13. ➡ Negative (–B) voltage lines.
14. Important safety notice:
    Component identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
15. **Description of "GROUND POINT"**
    The GND terminal of the rear panel and the chassis can serve as ground (earth) for signals. However, for direct current, they may sometimes fail to work as ground to check the DC voltage because they are connected to the ground line through 10Ω resistor – except for F.R. Germany [EG]. For DC voltage check, the "GROUND POINT" shown in "Printed circuit board" must be used.

• Terminal guide of transistors, IC's and diodes

SVINJM4562DD	AN7060F	SVISTK2028B	SVDMZ306	SVD2V20, SVDSRIK2	LN31GCPHL LN41YCPHL
					
2SA1123, 2SA1015 2SC1815	MA162A	MA150	MA1150M	LN25PR	
					

7 6 5
8
1 2 3 4
1 2 3 4 5 6 7 8 9
1
16
A K A
K
E
C
B
Black mark
Mark
K
A
K
A
A
K
A
K

ORDER NO. SD82032140C8–A

Stereo Integrated Amplifier SU-Z25/SU-Z25(K)

This booklet contains the specifications for SU-Z25, written in Germany, French and Spanish, and the circuits to be changed according to the areas.
File this manual together with the SU-Z25 service manual (Order No. SD82032140C8).

DEUTSCH

■ TECHNISCHE DATEN (Spezifikationen Können infolge von Verbesserungen ohne Ankündigung geändert werden.)

(DIN 45 500)

■ VERSTÄRKERTEIL

Dauerton-Ausgangsleistung bei 20 Hz ~ 20 kHz	
beide Kanäle ausgesteuert	2 × 25W (4 Ω)
	2 × 25W (8 Ω)
Dauerton-Ausgangsleistung bei 40 Hz ~ 16 kHz	
beide Kanäle ausgesteuert	2 × 25W (4 Ω)
	2 × 25W (8 Ω)
Dauerton-Ausgangsleistung bei 1 kHz	
beide Kanäle ausgesteuert	2 × 30W (4 Ω)
	2 × 30W (8 Ω)
Gesamtklirrfaktor	
Nennleistung bei 20 Hz ~ 20 kHz	0,05% (4 Ω)
	0,03% (8 Ω)
Nennleistung bei 40 Hz ~ 16 kHz	0,05% (4 Ω)
	0,03% (8 Ω)
Nennleistung bei 1 kHz	0,01% (4 Ω)
	0,005% (8 Ω)
halbe Nennleistung bei 20 Hz ~ 20 kHz	0,03% (8 Ω)
halbe Nennleistung bei 1 kHz	0,005% (8 Ω)
−26 dB Leistung bei 1 kHz	0,01% (4 Ω)
50 mW Leistung bei 1 kHz	0,01% (4 Ω)
Intermodulationsfaktor	
Nennleistung bei 250 Hz: 8 kHz = 4:1, 4 Ω	0,05%
Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω	0,03%
Leistungsbandbreite	
beide Kanäle ausgesteuert bei −3 dB	10 Hz ~ 25 kHz (4 Ω)
	10 Hz ~ 25 kHz (8 Ω)
Restbrumm und Geräusch	0,6 mV
Dämpfungsfaktor	20 (4 Ω), 40 (8 Ω)
Eingangsempfindlichkeit und -impedanz	
Phono	2,5 mV/47 kΩ
Tuner, Aux	150 mV/22 kΩ
Tape	150 mV/22 kΩ
Maximale TA-Eingangsspannung (1 kHz, eff.)	150 mV
Frequenzgang	
Phono	RIAA-Standardkurve
	±0,8 dB (30 Hz ~ 15 kHz)
Tuner, Aux, Tape	5 Hz ~ 80 kHz (−3 dB)

Geräuschabstand	
Nennleistung (4 Ω)	
Phono	73 dB (nach IHF, A: 78 dB)
Tuner, Aux, Tape	86 dB (nach IHF, A: 97 dB)
−26 dB Leistung (4 Ω)	
Phono	65 dB
Tuner, Aux, Tape	65 dB
50 mW Leistung (4 Ω)	
Phono	62 dB
Tuner, Aux, Tape	62 dB
Klangregler	
Baßregler (BASS)	50 Hz, +10 dB ~ −10 dB
Höhenregler (TREBLE)	20 kHz, +10 dB ~ −10 dB
Gehörrichtige Lautstärkekorrektur (Loudness)	
(bei −30 dB Ausgangsleistung)	50 Hz, +9 dB
Ausgangsspannung	
Aufnahmeausgang (REC OUT)	150 mV
Kanalabweichung (Aux, 250 Hz ~ 6300 Hz)	±1 dB
Übersprechdämpfung (Aux, 1 kHz)	50 dB
Kopfhörerpegel und -impedanz	340 mV/330 Ω
Lautsprecherimpedanz	4 Ω ~ 16 Ω

■ ALLGEMEINE DATEN

Leistungsaufnahme	260 W
Netzspannung	
	Wechselstrom 50Hz/60Hz, 220V (Für Kontinentaleuropa)
	Wechselstrom 50Hz/60Hz, 110V/120V/220V/240V (Für andere Länder)
Abmessungen (B×H×T)	430 × 86 × 252 mm
Gewicht	4,8 kg

Bemerkung:
Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.

FRANÇAIS

CARACTERISTIQUES (Sujet á changement sans préaris.)

(DIN 45 500)

SECTION AMPLIFICATEUR

Puissance de sortie continue de 20 Hz~20 kHz, les deux canaux en circuit	2 × 25W (4Ω) 2 × 25W (8Ω)
Puissance de sortie continue de 40 Hz~16 kHz, les deux canaux en circuit	2 × 25W (4Ω) 2 × 25W (8Ω)
Puissance de sortie continue à 1 kHz les deux canaux en circuit	2 × 30W (4Ω) 2 × 30W (8Ω)
Distorsion harmonique totale	
à puissance nominale (20 Hz~20 kHz)	0,05% (4Ω) 0,03% (8Ω)
à puissance nominale (40 Hz~16 kHz)	0,05% (4Ω) 0,03% (8Ω)
à puissance nominale (1 kHz)	0,01% (4Ω) 0,005% (8Ω)
à demi-puissance (20 Hz~20 kHz)	0,03% (8Ω)
à demi-puissance (1 kHz)	0,005% (8Ω)
puissance de −26 dB à 1 kHz	0,01% (4Ω)
puissance de 50 mW à 1 kHz	0,01% (4Ω)
Distorsion d'intermodulation	
à puissance nominale à 250 Hz: 8 kHz=4:1, 4Ω	0,05%
à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0,03%
Réponse de fréquences	
les deux canaux en circuit, −3 dB	10 Hz~25 kHz (4Ω) 10 Hz~25 kHz (8Ω)
Bruit et ronflement résiduels	0,6 mV
Coefficient d'amortissement	20 (4Ω), 40 (8Ω)
Sensibilité et impédance d'entrée	
PHONO	2,5 mV/47kΩ
SYNTONISATEUR, AUX (TUNER, AUX)	150 mV/22kΩ
BANDE (TAPE)	150 mV/22kΩ
PHONO (tension d'entrée maximum, 1 kHz RMS)	150 mV
Réponse de fréquence	
PHONO	Courbe nominale RIAA ±0,8 dB (30 Hz~15 kHz)
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)	5 Hz~80 kHz (−3 dB)
Signal/Bruit	
à puissance nominale (4Ω)	
PHONO	73 dB (IHF, A: 78 dB)
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)	86 dB (IHF, A: 97 dB)
puissance de −26 dB (4Ω)	
PHONO	65 dB
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)	65 dB
puissance de 50 mW (4Ω)	
PHONO	62 dB
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)	62 dB
Réglage de la tonalité	
BASSES (BASS)	50 Hz, +10 dB~ −10 dB
AIGUS (TREBLE)	20 kHz, +10 dB~ −10 dB
Compensateur physiologique (volume à −30 dB)	50 Hz, +9 dB
Tension de sortie	
SORTIE ENREGISTREMENT (REC OUT)	150 mV
Equilibrage des canaux, AUX 250 Hz~6 300 Hz	±1 dB
Séparation des canaux, AUX 1 kHz	50 dB
Niveau de sortie des casques et impédance	340 mV/330Ω
Impédance de charge	4Ω~16Ω

DIVERS

Consommation	260W
Alimentation	CA 50 Hz/60 Hz, 220V (Pour l'Europe) CA 50Hz/60Hz, 110V/120V/220V/240V (Autres)
Dimensions (L×H×Pr)	430 × 86 × 252 mm
Poids	4,8 kg

Remarque:
On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P. 3045).

ESPAÑOL

ESPECIFICACIONES

(Estas especificaciones están sujetas a cualquier cambio sin previo eviso.)

(DIN 45 500)

SECCION AMPLIFICADOR

Potencia continua de 20 Hz~20 kHz en ambos canales	2 × 25W (4Ω) 2 × 25W (8Ω)
Potencia continua de 40 Hz~16 kHz en ambos canales	2 × 25W (4Ω) 2 × 25W (8Ω)
Potencia continua de 1 kHz en ambos canales	2 × 30W (4Ω) 2 × 30W (8Ω)
Distorsión armónica total	
potencia de régimen a 20 Hz~20 kHz	0,05% (4Ω) 0,03% (8Ω)
potencia de régimen a 40 Hz~16 kHz	0,05% (4Ω) 0,03% (8Ω)
potencia de régimen a 1 kHz	0,01% (4Ω) 0,005% (8Ω)
mitad de potencia a 20 Hz~20 kHz	0,03% (8Ω)
mitad de potencia a 1 kHz	0,005% (8Ω)
−26 dB de potencia a 1 kHz	0,01% (4Ω)
50 mW de potencia a 1 kHz	0,01% (4Ω)
Distorsión por intermodulación	
potencia de régimen a 250 Hz: 8 kHz=4:1, 4Ω	0,05%
potencia de régimen a 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0,03%
Ancho de banda de potencia con ambos canales, −3 dB	10 Hz~25 kHz (4Ω) 10 Hz~25 kHz (8Ω)
Zumbido residual y ruido	0,6 mV
Factor de amortiguamiento	20 (4Ω), 40 (8Ω)
Sensibilidad e impedancia de entrada	
TOCADISC. (PHONO)	2,5 mV/47kΩ
SINTON., AUX. (TUNER, AUX)	150 mV/22kΩ
GRAB. (TAPE)	150 mV/22kΩ
Voltaje máximo de entrada de PHONO (1 kHz, RMS)	150 mV
Respuesta de frecuencia	
TOCADISC. (PHONO)	curva RIAA estándar ±0,8 dB (30 Hz~15 kHz)
SINTON., AUX., GRAB. (TUNER, AUX, TAPE)	5 Hz~80 kHz (−3 dB)
Relación de señal a ruido	
potencia de régimen (4Ω)	
TOCADISC. (PHONO)	73 dB (IHF, A: 78 dB)
SINTON., AUX., GRAB. (TUNER, AUX, TAPE)	86 dB (IHF, A: 97 dB)
−26 dB de potencia (4Ω)	
TOCADISC. (PHONO)	65 dB
SINTON., AUX., GRAB. (TUNER, AUX, TAPE)	65 dB
50 mW de potencia (4Ω)	
TOCADISC. (PHONO)	62 dB
SINTON, AUX., GRAB. (TUNER, AUX, TAPE)	62 dB
Controles de tono	
BAJOS (BASS)	50 Hz, +10 dB~ −10 dB
AGUDOS (TREBLE)	20 kHz, +10 dB~ −10 dB
Control de sonoridad (volumen a −30 dB)	50 Hz, +9 dB
Voltaje de salida	
SAL. GRAB. (REC OUT)	150 mV
Equilibrio de canales, AUX 250 Hz~6 300 Hz	±1 dB
Separación de canales, AUX 1 kHz	50 dB
Impedancia y nivel de salida de los auriculares	340 mV/330Ω
Impedancia de carga	4Ω~16Ω

GENERAL

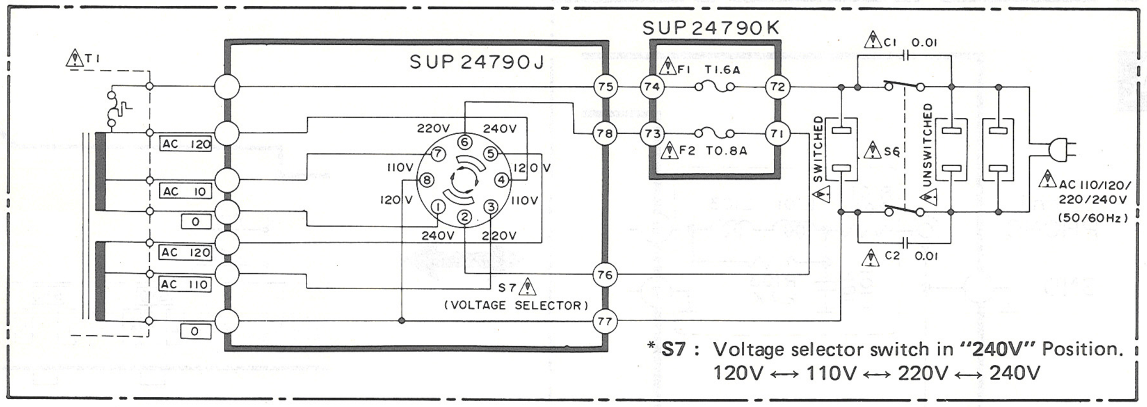
Consumo de energía	260W
Alimentación de energía	CA 50 Hz/60 Hz, 220V (Para Europa continental) CA 50Hz/60Hz, 110V/120V/220V/240V (Para otros países)
Dimensiones (An.×Al.×Prof.)	430 × 86 × 252 mm
Peso	4,8 kg

Nota:
La distorsión armónica total se mide con el analizador de espectro digital (sistema H.P. 3045).

CIRCUITS TO BE CHANGED AND THE AREAS

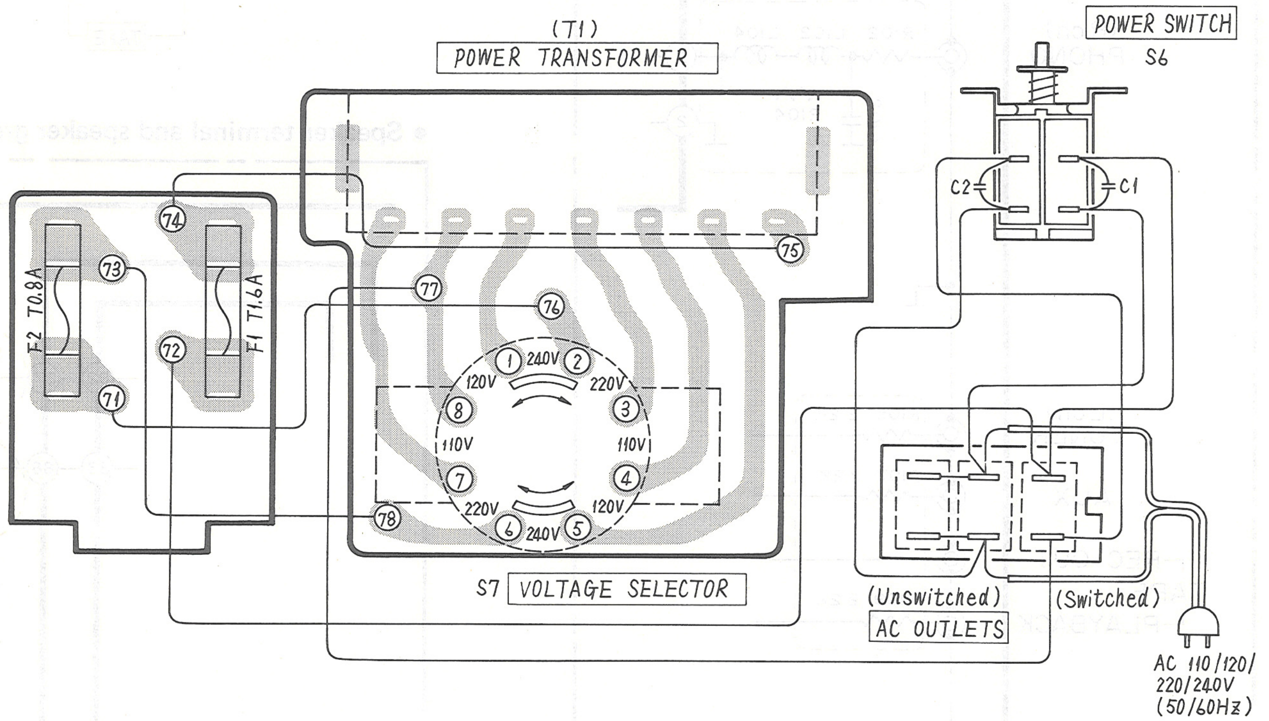
- Power source circuit for [XA] area.

* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.



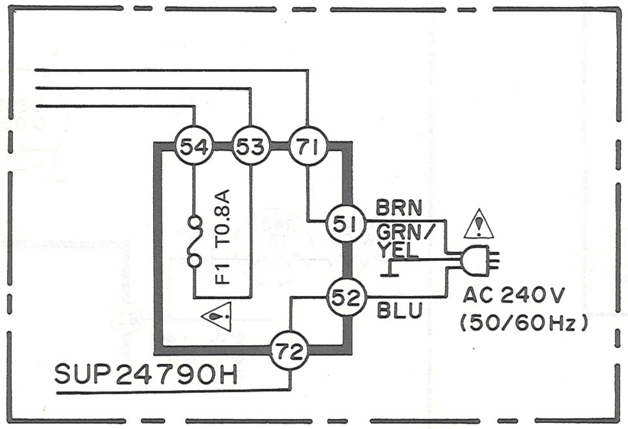
SUP24790K
SUP24790J
T1
C1 0.01
C2 0.01
F1 T1.6A
F2 T0.8A
AC 120
AC 10
0
AC 120
AC 110
0
220V
240V
110V
120V
S7
(VOLTAGE SELECTOR)
SWITCHED
UNSWITCHED
S6
AC 110/120/220/240V (50/60Hz)
75
74
72
78
73
71
76
77

*** S7 :** Voltage selector switch in **"240V"** Position.
120V ⟷ 110V ⟷ 220V ⟷ 240V



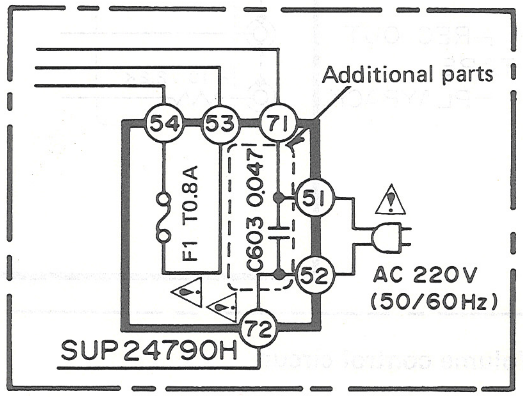
(T1)
POWER TRANSFORMER
POWER SWITCH
S6
C2
C1
F2 T0.8A
F1 T1.6A
74
73
72
71
75
77
76
78
1 240V
2 220V
3 110V
4 120V
5 240V
6 220V
7 120V
8 110V
S7 VOLTAGE SELECTOR
(Unswitched)
(Switched)
AC OUTLETS
AC 110/120/220/240V (50/60Hz)

- Power source circuit for [XL] area. (Australia)



54
53
71
F1 T0.8A
51
52
72
BRN
GRN/YEL
BLU
AC 240V (50/60Hz)
SUP24790H

- Power source circuit for [EF] area. (France)

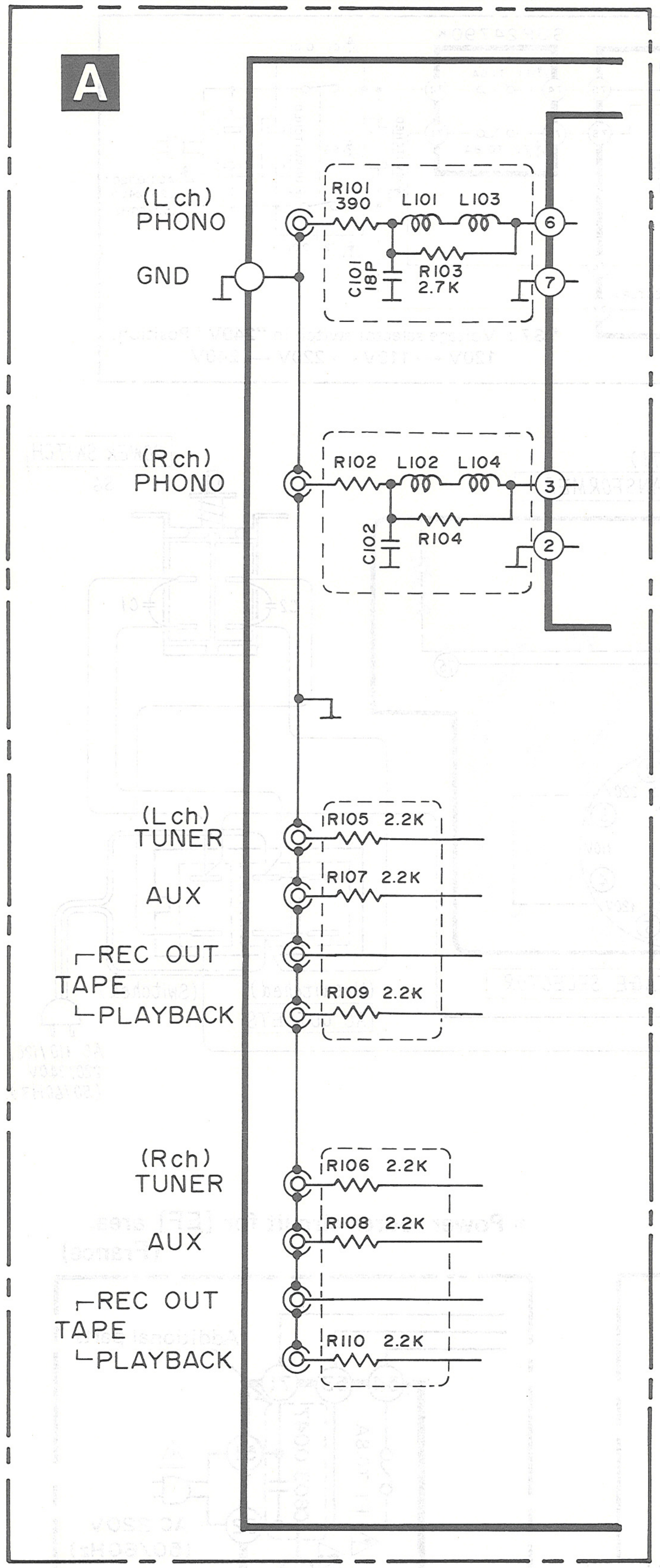


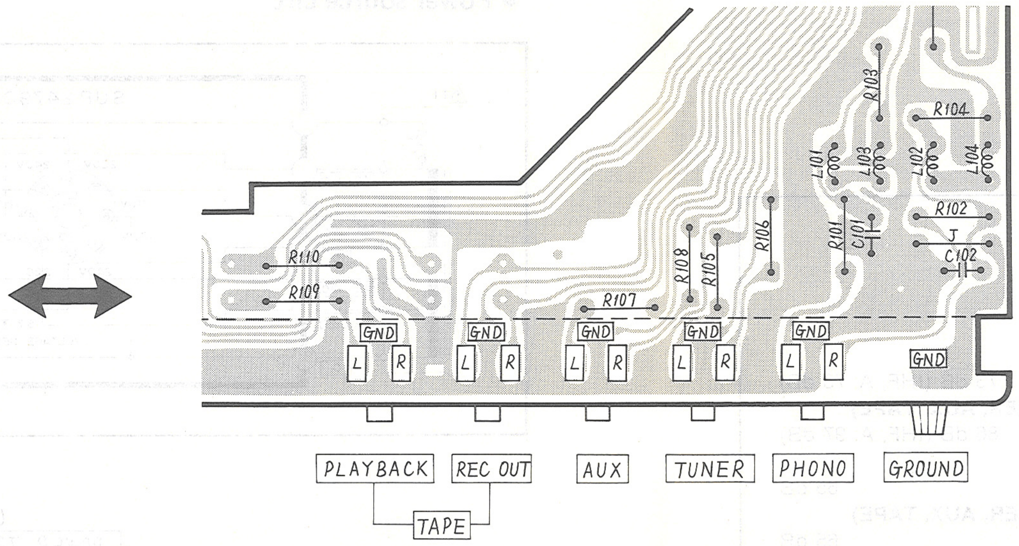
Additional parts
54
53
71
F1 T0.8A
C603 0.047
51
52
72
AC 220V (50/60Hz)
SUP24790H

[EG] area only [EG] is available in F.R. Germany.

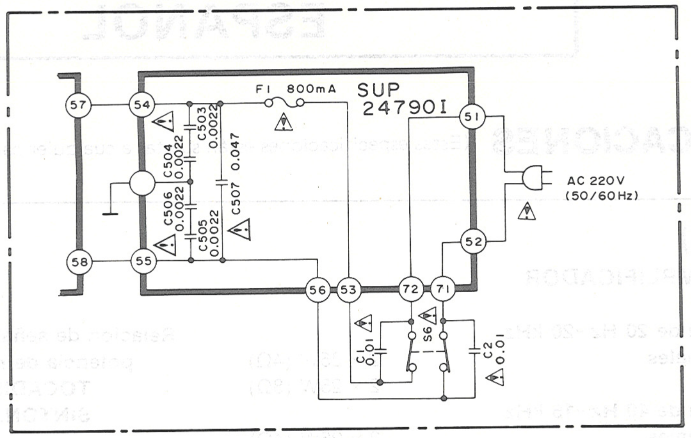
⬚ **Additional parts**

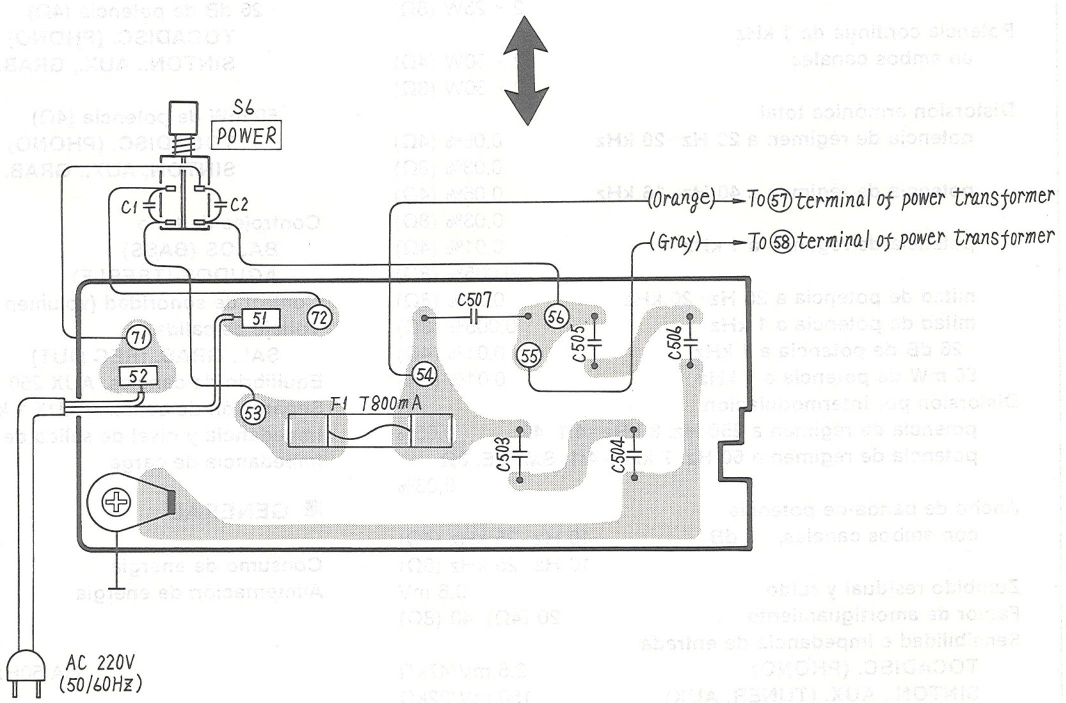
• Input terminal circuit


A
(L ch) PHONO
GND
R101 390
L101
L103
R103 2.7K
C101 18P
6
7
(R ch) PHONO
R102
L102
L104
R104
C102
3
2
(L ch) TUNER
R105 2.2K
AUX
R107 2.2K
TAPE
REC OUT
PLAYBACK
R109 2.2K
(R ch) TUNER
R106 2.2K
AUX
R108 2.2K
TAPE
REC OUT
PLAYBACK
R110 2.2K

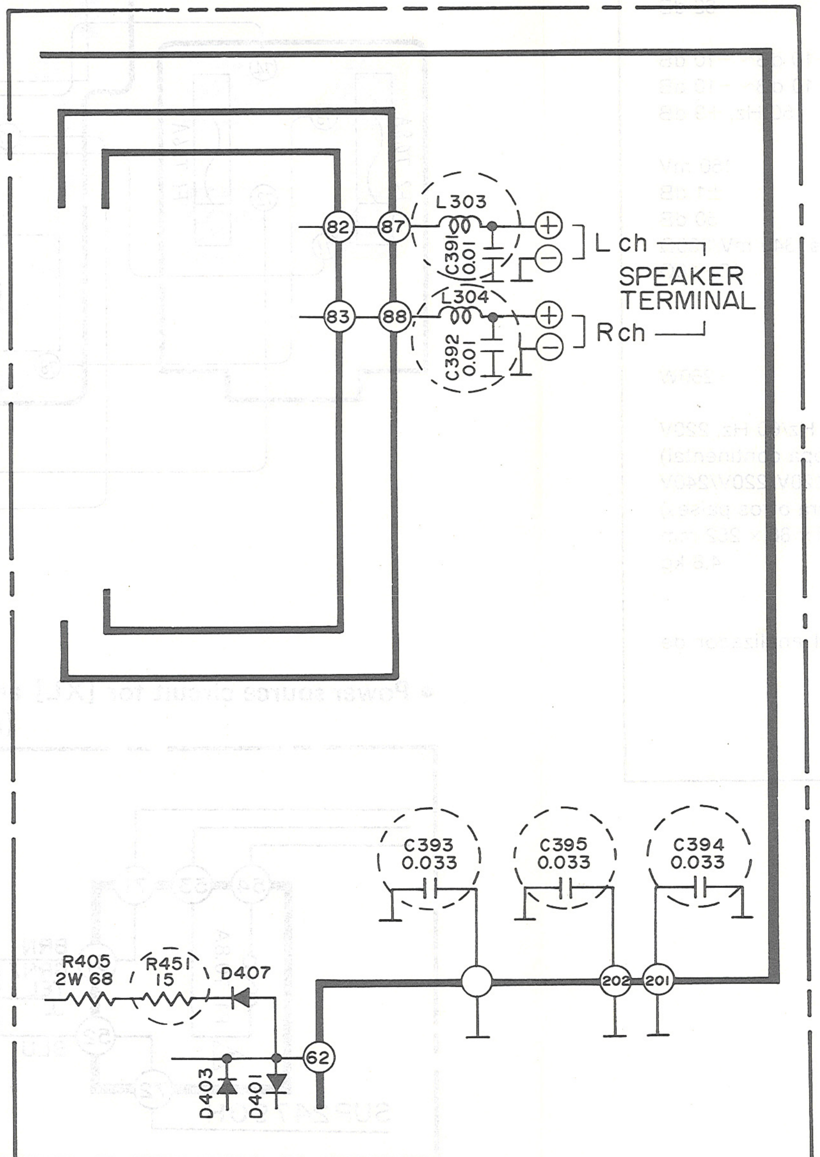

R104
R103
L101
L103
L102
L104
R102
R101
C101
C102
R106
R108
R105
R110
R109
R107
GND
L
R
PLAYBACK
REC OUT
TAPE
AUX
TUNER
PHONO
GROUND

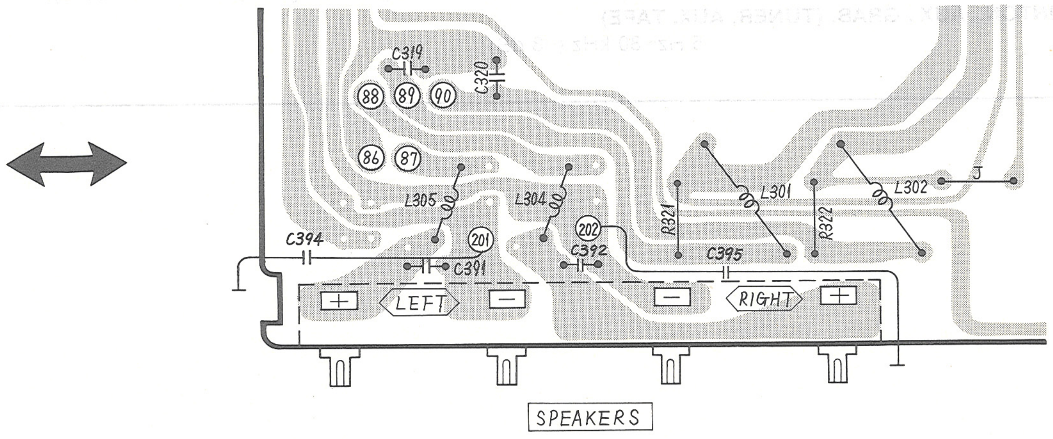
• Power source circuit


57
54
F1 800mA
SUP 247901
51
AC 220V (50/60Hz)
C503 0.0022
C504 0.0022
C507 0.047
C506 0.0022
C505 0.0022
58
55
52
56
53
72
71
C1
S6
C2 0.01


S6
POWER
C1
C2
(Orange)→To 57 terminal of power transformer
(Gray)→To 58 terminal of power transformer
C507
51
72
71
56
55
52
54
53
C505
C506
F1 T800mA
C503
C504
AC 220V (50/60Hz)

• Speaker terminal and speaker ground circuit


L303
82
87
C391 0.01
L ch
SPEAKER TERMINAL
L304
83
88
C392 0.01
R ch
C393 0.033
C395 0.033
C394 0.033
R405 2W 68
R451 15
D407
202
201
62
D403
D401


C319
C320
88
89
90
86
87
L305
L304
L301
L302
R321
R322
201
202
C394
C391
C392
C395
LEFT
RIGHT
SPEAKERS

• Volume control circuit

Change of resistor value
R201, 202 (2.7kΩ → 1.2kΩ)

Deletion of capacitor
C203, 204 (470pF → Deletion)

Printed in Japan
82039060 ® YK/IM